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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/573,780	03/28/2006	Shunichi Fukuzumi	1422-0713PUS1	5508
2292 7590 03/14/2007 BIRCH STEWART KOLASCH & BIRCH PO BOX 747 FALLS CHURCH, VA 22040-0747			EXAMINER THOMPSON RUMMEL, PONDER N	
			ART UNIT	PAPER NUMBER
			1709	

SHORTENED STATUTORY PERIOD OF RESPONSE	NOTIFICATION DATE	DELIVERY MODE
3 MONTHS	03/14/2007	ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Notice of this Office communication was sent electronically on the above-indicated "Notification Date" and has a shortened statutory period for reply of 3 MONTHS from 03/14/2007.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

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<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/573,780	FUKUZUMI ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Ponder N. Thompson-Rummel	1709	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 28 July 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>6/28/06, 3/28/06</u> .  | 6) <input type="checkbox"/> Other: _____                          |

**DETAILED ACTION**

***Response to Preliminary Amendment***

1. The preliminary amendment filed July 28, 2006 has been entered and fully considered.
2. Claims 10-20 are pending, of which 3-20 are new. New claims 3-20 are supported by the specification as originally filed.

***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

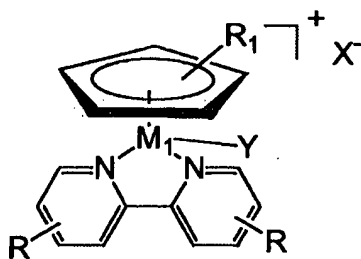
A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claim 1-9, 11-16, 18 and 19 are rejected under 35 U.S.C. 102(a) as being anticipated by Himeda et al (JP 2004-224715).

With respect to claims 1,2, 7-9, and 14-16 Himeda et al. discloses a compound comprising a metal hydride complex represented by formula III, wherein



(III)

M in formula III is iridium (paragraphs [0004] and [0005] and Example 1, Table 2) ruthenium (paragraphs [0004] and [0005]), or rhodium (paragraphs [0004] and [0005], and Examples 1-3, Table 1), and R and R<sub>1</sub> are hydrogen atoms (paragraph [0004]).

With respect to claim 3 and 12, Himeda et al. further discloses: (a) the metal hydride complex of formula III wherein M represents a metal atom (formula III); and (b) irradiation of the metal hydride complex until reaction of the metal hydride complex takes place (paragraph [0007]).

With respect to claims 4 and 18, Himeda et al. additionally discloses dissolving the metal hydride complex in mixed solvent of water-organic substance (paragraph [0006]).

With respect to claims 5 and 19, Himeda et al. additionally discloses dissolving the metal hydride complex is dissolved in water (paragraphs [0004] and [0006]).

With respect to claims 6, 12, and 13, Himeda et al. also discloses exciting the metal hydride by irradiating the metal hydride with visible light (paragraphs [0006], last sentence and [0007]).

With respect to claims 11 and 20, Himeda et al. discloses a method for generating an acid of claim 4, wherein the organic solvent consists of alcohol (paragraph [0006]).

5. Claim 1-7, 11-14, 18-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Ziessel (Journal American Chem. Society 1993, 115, 118-127).

With respect to claim 1, 2, 7, 11 and 14, Ziessel discloses a compound comprising a metal hydride complex represented by the formula (2a) (see Scheme I, 2a-d – page 119) wherein the metal atom in formula (2a) is iridium (see Scheme I, 2a-d – page 119 and column 1, paragraph 3 - page 120).

With respect to claim 3, 6, 12 and 13, Ziessel further discloses compound providing a metal hydride complex of formula (2a) wherein: (a) iridium represents the metal atom (Scheme I, 2a-d page 119); and (b) exciting the metal hydride complex by irradiating the metal hydride with white light until deprotonation takes place (page 122 -Table I, complex 2c, paragraph a).

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With respect to claims 4, 11, 18 and 20, Ziessel additionally discloses a compound of claim 3 wherein the metal hydride complex is dissolved in an organic solvent, acetonitrile ( $\text{CH}_3\text{CN}$  - column 2, paragraph 1).

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 10 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lenges et al. (Organometallics 2000, Volume 19, pages 1247-1254) in view of Himeda et al (JP 2004-224715).

With respect to claims 10 and 17, Lenges et al. discloses a metal hydride complex of formula (1) wherein X, the metal atom, is cobalt (figure 2, page 1252 and paragraph 1). When protonated, the cobalt complex (compound 13) meets the limitations for the compound of formula I. For that reason it would have been obvious to deprotonate said cobalt complex as taught by Himeda et al (paragraphs [0006], last sentence and [0007]).

**Conclusion**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ponder N. Thompson-Rummel whose telephone number is 571-272-9816. The examiner can normally be reached on Monday-Friday 7:30 am - 5:00 pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Alexa Neckel can be reached on 571-272-9827. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

ptr *P.T.R.*

*Barbara Gilliam*  
**BARBARA GILLIAM**  
**PRIMARY EXAMINER**